Lowell Water Utility

Downstream Notification Report
NPDES Permit No: MA0100633

Date of Event:
Sat, Aug 11, 2018

Kevin Brander, Massachusetts DEP
Nihar Mohanty, Massachusetts DEP
Jeff Kennedy, Mass Division of Marine Fisheries
Doug Koopman, United States EPA
Todd Borci, United States EPA
Aaron Fox, Lowell Water Utility
Mark Young, Lowell Water Utility
Tom Kawa, Lowell Water Utility
Mike Stuer, Lowell Water Utility
Rick Toohey, Lowell Water Utility
Marlene Ladderbush, Tewksbury Water Plant
James McSurdy, Andover Water Plant
Thomas Lannan, Methuen Water Plant
Dan DiNicola, Lawrence Water and Sewer
Brian Pena, Lawrence Water and Sewer
Rusty Russell, Merrimack River Watershed Council

Dear Environmental Professionals and Interested Parties:

This report describes high-flow treatment performed at Lowell's Duck Island Clean Water Facility, as well as discharges of untreated Combined Sewer Overflows (CSOs) at the Utility's diversion structures. High-flow treatment refers to combined stormwater and sewage that receives screening and clarification before being mixed with water receiving biological treatment. This mixture is then disinfected and discharged into the Merrimack River in full compliance with permit requirements. CSO diversions are an untreated mixture of stormwater and dilute sewage that is discharged directly into nearby receiving waters when the capacity of the treatment and transport systems are exceeded as a result of heavy rain. These diversions occur only when necessary to protect public health and safety.

Wastewater Flow to Duck Island

Daily Flow Rate (MGD)	Peak Hourly Flow Rate (MGD)	Instantaneous Peak Flow Rate (MGD)
45.56	107.24	127.34

Precipitation

	Daily Total (in)	Duration Total (hr)	Average Intensity (in/hr)	Peak Intensity (in/15-min)
Duck Island	1.17	11	0.11	0.18
River's Edge	1.27	9	0.14	0.20
Warren	1.94	11	0.18	0.34

High-Flow Treatment Summary

Duration (Minutes)	Volume (MG)
565	18.24

Combined Sewer Overflows Summary

Maximum Duration (Minutes)	Volume (MG)
206	24.49

Person Reporting Event: Greg Coyle - Lowell Water Engineering

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High-Flow Treatment Duck Island			
Time	Duration (Minutes)	Volume (MG)	Duck Island Rain (in)
01:00			
02:00			
03:00			
04:00			
05:00			
06:00			
07:00			
08:00			
09:00			
10:00			
11:00			
12:00			0.01
13:00			0.04
14:00			0.51
15:00	57	2.25	0.28
16:00	60	2.63	0.20
17:00	60	2.65	0.04
18:00	60	2.48	
19:00	60	2.23	0.01
20:00	44	1.84	0.01
21:00	60	0.63	0.02
22:00	44	0.98	0.03
23:00	60	1.46	0.02
24:00	60	1.09	

Barasford Station Diversion to Merrimack River		
Time	Duration (Minutes)	Volume (MG)
01:00		
02:00		
03:00		
04:00		
05:00		
06:00		
07:00		
08:00		
09:00		
10:00		
11:00		
12:00		
13:00		
14:00		
15:00	41	0.65
16:00	60	0.59
17:00	60	0.27
18:00	45	0.06
19:00		
20:00		
21:00		
22:00		
23:00		
24:00		

Beaver Brook Station Diversion to Beaver Brook		
Time	Duration (Minutes)	Volume (MG)
01:00		
02:00		
03:00		
04:00		
05:00		
06:00		
07:00		
08:00		
09:00		
10:00		
11:00		
12:00		
13:00		
14:00		
15:00	49	1.00
16:00	60	1.01
17:00	51	0.45
18:00		
19:00		
20:00		
21:00		
22:00		
23:00		
24:00		

High-Flow Treatment Duck Island			
24 Hour	Total Duration (Minutes)	Total Volume (MG)	Total Rainfall (in)
	565	18.24	1.17

Barasford Station To Merrimack River		
24 Hour	Total Duration (Minutes)	Total Volume (MG)
	206	1.57

Beaver Brook Station To Beaver Brook		
24 Hour	Total Duration (Minutes)	Total Volume (MG)
	160	2.46

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Merrimack Station Diversion to Merrimack River		
Time	Duration (Minutes)	Volume (MG)
01:00		
02:00		
03:00		
04:00		
05:00		
06:00		
07:00		
08:00		
09:00		
10:00		
11:00		
12:00		
13:00		
14:00		
15:00	59	2.25
16:00	60	1.66
17:00	57	0.26
18:00		
19:00		
20:00		
21:00		
22:00		
23:00		
24:00		

Read Station Diversion to Merrimack River		
Time	Duration (Minutes)	Volume (MG)
01:00		
02:00		
03:00		
04:00		
05:00		
06:00		
07:00		
08:00		
09:00		
10:00		
11:00		
12:00		
13:00		
14:00		
15:00		
16:00		
17:00		
18:00		
19:00		
20:00		
21:00		
22:00		
23:00		
24:00		

Tilden Station Diversion to Merrimack River		
Time	Duration (Minutes)	Volume (MG)
01:00		
02:00		
03:00		
04:00		
05:00		
06:00		
07:00		
08:00		
09:00		
10:00		
11:00		
12:00		
13:00		
14:00	12	0.26
15:00	60	1.90
16:00	60	0.82
17:00	60	0.14
18:00	4	0.04
19:00		
20:00		
21:00		
22:00		
23:00		
24:00		

Merrimack Station To Merrimack River		
24 Hour	Total Duration (Minutes)	Total Volume (MG)
	176	4.17

Read Station To Merrimack River		
24 Hour	Total Duration (Minutes)	Total Volume (MG)
	0	

Tilden Station To Merrimack River		
24 Hour	Total Duration (Minutes)	Total Volume (MG)
	196	3.16

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Walker Station Diversion to Merrimack River

Time	Duration (Minutes)	Volume (MG)
01:00		
02:00		
03:00		
04:00		
05:00		
06:00		
07:00		
08:00		
09:00		
10:00		
11:00		
12:00		
13:00		
14:00		
15:00	54	2.31
16:00	35	0.18
17:00		
18:00		
19:00		
20:00		
21:00		
22:00		
23:00		
24:00		

Warren Station Diversion to Concord River

Time	Duration (Minutes)	Volume (MG)	Warren Rain (in)
01:00			
02:00			
03:00			
04:00			
05:00			
06:00			
07:00			
08:00			
09:00			
10:00			
11:00			
12:00			0.01
13:00			0.06
14:00	33	1.83	0.81
15:00	60	2.68	0.48
16:00	60	0.83	0.25
17:00			0.07
18:00			
19:00			0.01
20:00			0.01
21:00			0.07
22:00			0.09
23:00			0.08
24:00			

West Station Diversion to Merrimack River

Time	Duration (Minutes)	Volume (MG)
01:00		
02:00		
03:00		
04:00		
05:00		
06:00		
07:00		
08:00		
09:00		
10:00		
11:00		
12:00		
13:00		
14:00		
15:00	31	1.50
16:00	60	1.70
17:00	60	1.60
18:00	46	0.50
19:00		
20:00		
21:00		
22:00		
23:00		
24:00		

Walker Station To Merrimack River

24 Hour	Total Duration (Minutes)	Total Volume (MG)
	89	2.49

Warren Station To Concord River

24 Hour	Total Duration (Minutes)	Total Volume (MG)	Total Rainfall (in)
	153	5.34	1.94

West Station To Merrimack River

24 Hour	Total Duration (Minutes)	Total Volume (MG)
	197	5.30